



BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT

# California Bay Area Air Quality Management District Wood Smoke Program

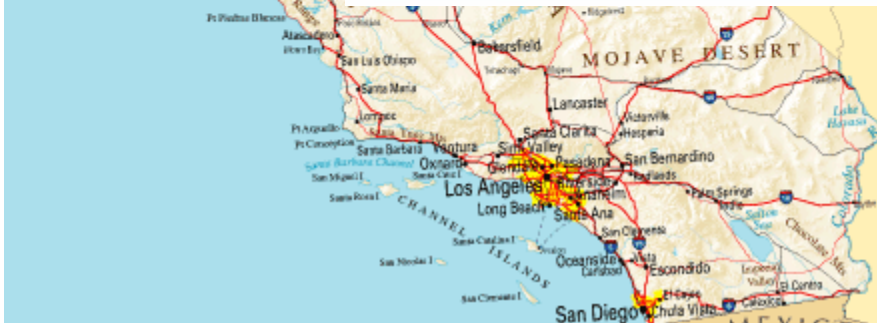
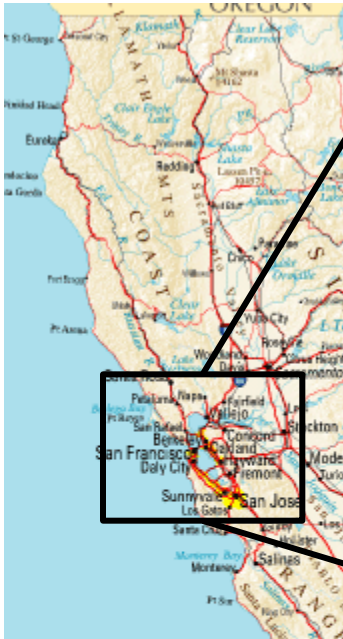
**EPA/WESTAR Workshop  
Salt Lake City, UT  
March 2, 2011**

**Barbara Coler  
Air Quality Program Manager  
Compliance & Enforcement Division**

# Bay Area Air Quality Management District



- **1<sup>st</sup> Regional Air Pollution Control agency – 1955**
- **9 Bay Area Counties**
- **7 Million Residents**
- **~ 1.4 Million Wood-Burning Devices**
- **~ 60 Inspectors**



A scenic view of the San Francisco skyline at sunset, with the Golden Gate Bridge on the left and the city's skyscrapers, including the Transamerica Pyramid, silhouetted against a vibrant orange and pink sky. The water of the bay is in the foreground.

# Overview

- Public Health & PM<sub>2.5</sub>
- Regulatory Background
- Enforcement & Complaints
- Outreach
- Program Successes





# Wood Smoke

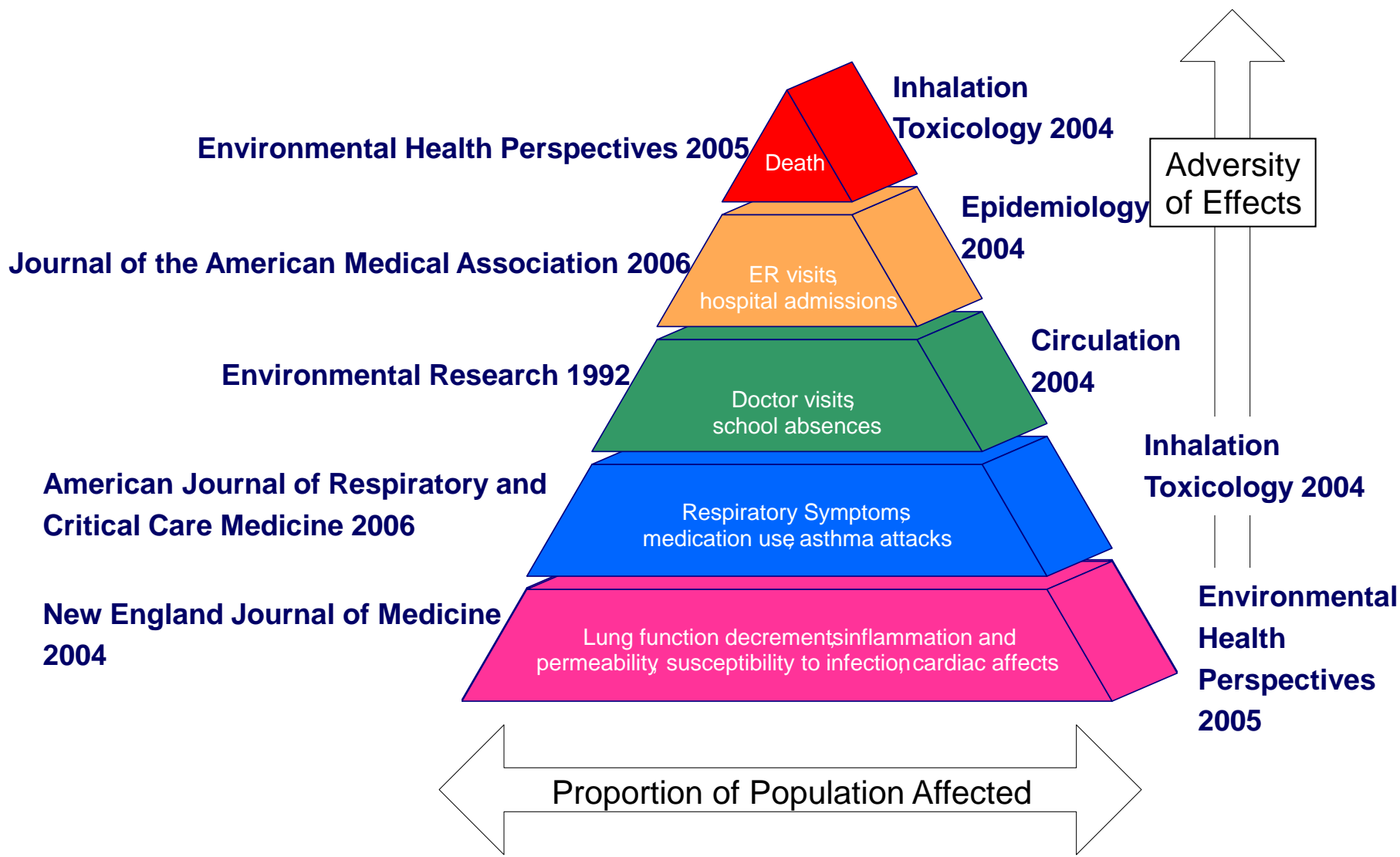
## *Public Health Issues*

- Bay Area - fine particulate matter ( $PM_{2.5}$ ) is a serious public health concern
- PM can act as a gas - travels regionally and remains suspended
- Immediate health impacts (e.g., ER visits)
- National Ambient Air Quality Standard for fine particulates  $PM_{2.5}$  ( $65 \mu\text{g}/\text{m}^3$  to  $35 \mu\text{g}/\text{m}^3$ )
- Bay Area is in non-attainment for  $PM_{2.5}$
- Woodsmoke is the largest contributor to wintertime  $PM_{2.5}$

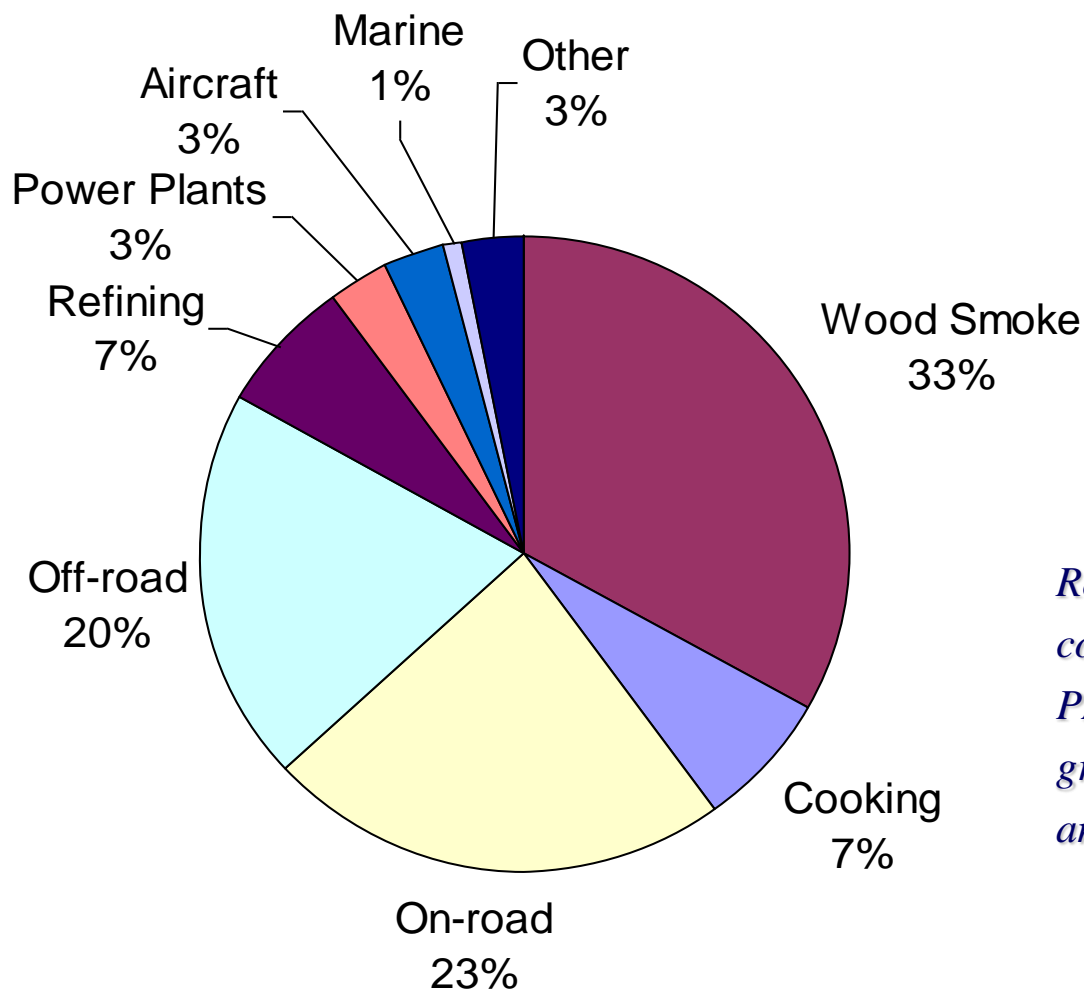


# Particulate Matter

## *Pyramid of Health Effects*



# Wood Smoke and Peak Winter PM<sub>2.5</sub>

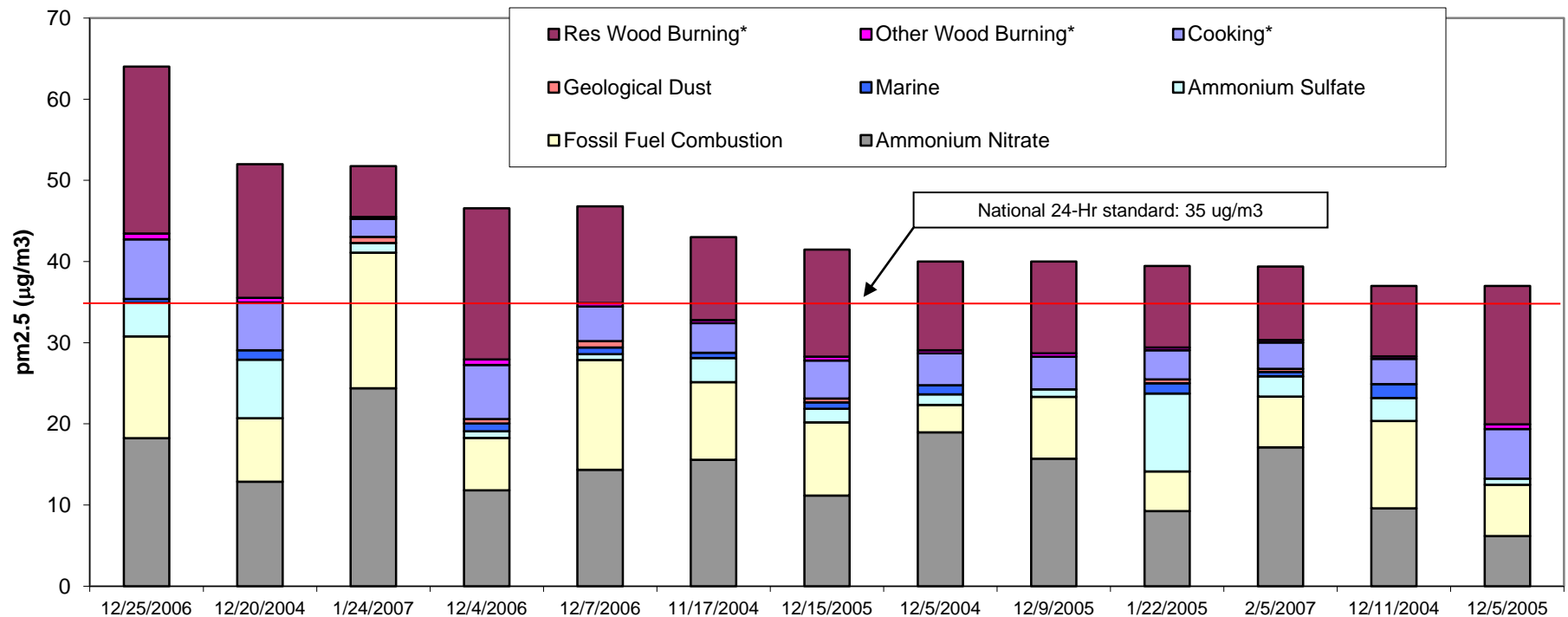


**Woodsmoke is the Largest Contributor of Winter PM<sub>2.5</sub>**

*Reducing Woodsmoke is the most cost effective reduction strategy for PM<sub>2.5</sub> and will likely have the greatest improvement in air quality and public health*

# Contributors to PM<sub>2.5</sub> Excesses

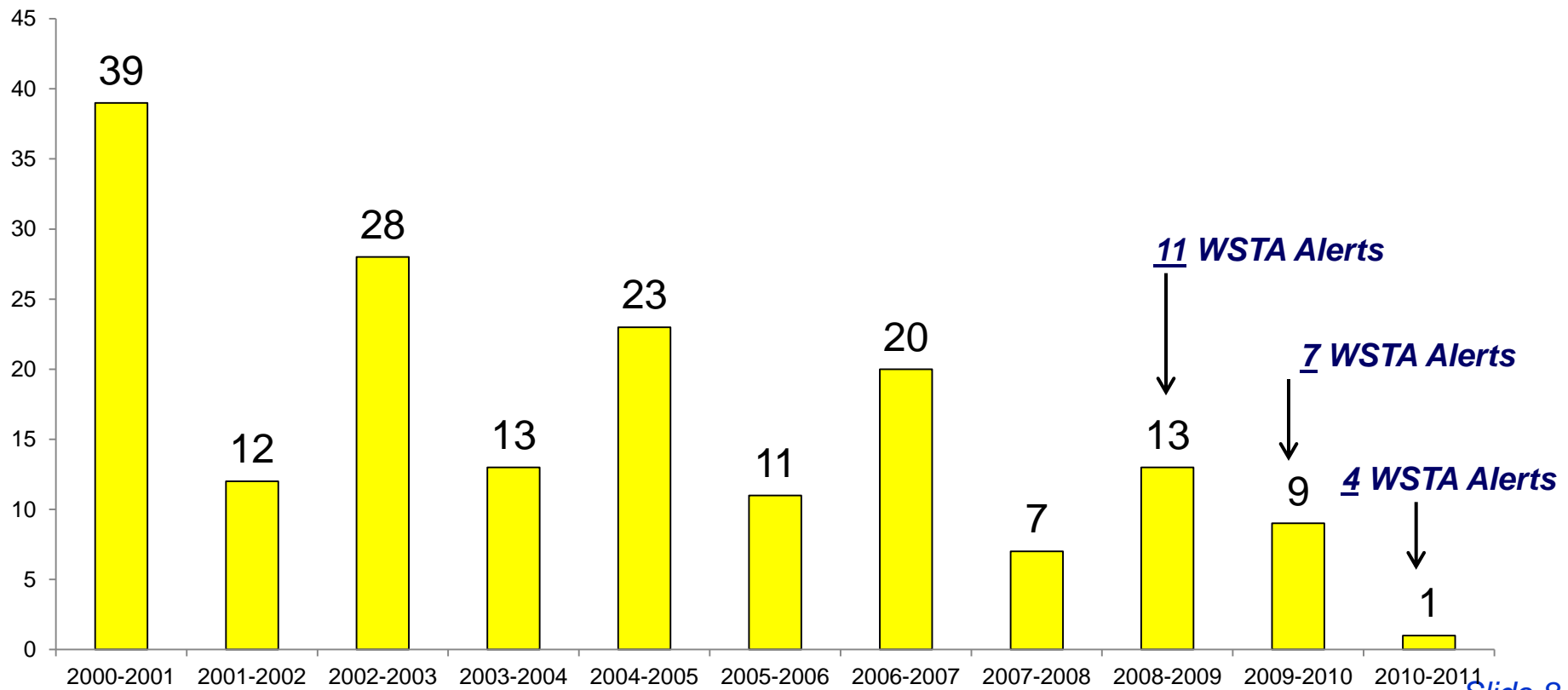
Estimated Source Contributions to PM<sub>2.5</sub> Exceedances  
San Jose 2004-2007



\*-13-Highest Days, Distributions estimated from CMB & C-14, Wood Burning & Cooking adjusted by emission inventory estimates.

# PM<sub>2.5</sub> Exceedances

## Days Over 35 µg/m<sup>3</sup> Standard (Nov 1 - Feb 28)







# **BAAQMD Regulatory Background**

- Voluntary Curtailments ~ 2 decades (1991-2008)
- Early 1990's - Model Ordinance for local governments
- July 9, 2008 - Wood Smoke Rule adopted (Regulation 6, Rule 3)



# Regulation 6, Rule 3

## Wood Smoke Rule:

- Prohibits burning on nights with high PM forecast (*Winter Spare the Air Season: Nov 1 – Feb 28*);
- Limits visible emissions from wood-burning devices;
- Requires cleaner burning technology for sale of new and used devices;
- Requires cleaner burning technology in new construction and remodels;
- Prohibits burning garbage in wood-burning devices; &
- Requires seasoned wood and solid fuel labeling.

# Program Highlights

- Advance public notice of *WSTA* alerts
  - ✓ Prior day forecasting, runs 24 hrs, midnight to midnight
- 1<sup>st</sup> Violation:
  - ✓ Warning letter
- 2<sup>nd</sup> Violation:
  - ✓ NOV with \$400 penalty
- Inspection patrols in high burning &/or high wood smoke complaint areas
- Incentive Program
  - ✓ First 2 years – gas stoves & inserts
- Essential partnerships:
  - ✓ Enforcement & Outreach
  - ✓ Community Groups





# Wood Smoke Enforcement

	2008/09	2009/10	2010/11
<i>WSTA Alerts</i>	11	7	4
PM <sub>2.5</sub> Excesses	13	9	1
Complaints	1,500	2,355	1,328
WS Direct Mail	1,550	10,270	579
Warning Letters	254	310	58
NOVs	1	9	2
Exemptions	0	44	52





# Burn Status & Complaint Intake

- 1-877-4NO-BURN - Burn Status
  - BAAQMD, Other CA and Other State Burn Programs
  - Multilingual – 5 languages
- Complaint Intake
  - Online Complaint Form > <http://sparetheair.org>
  - 1-877-4NO-BURN > Voice Recognition System
    - Data Collected:
      - ✓ Caller information (can be anonymous)
      - ✓ Location of burning
      - ✓ Time & date of burning
      - ✓ Smoke color and density
      - ✓ Odor (trash?)
      - ✓ Brief description

# Online Complaint Data Management System



## SEARCH TOOLS

### [Complaint Search](#)

[Complaints in the last 24 hours](#)

[Complaints in the last 24 hours \(Heavy\)](#)

[Complaints in the last 48 hours](#)

[Complaints in the last 48 hours \(Heavy\)](#)

[Complaints in the last week](#)

[Multiple Complaint Tool](#)

[Create New Route](#)

[Look Up/Save Routing Tool](#)

[Routing Tool History](#)

## ADMINISTRATOR TOOLS

[Manage Users](#)

[Change Administrator Password](#)

[Complaint Holding Area](#)

[Move Complaints Into Holding Area](#)

[Manage Exempt Address List](#)

[Manage Contact Supervisor Address List](#)

[Upload Enforcements](#)

[Upload Exempt Addresses](#)

[Export Addresses \(in previous 7 days, 30 days and 180 days\)](#)

## ADMINISTRATIVE TOOLS AND REPORTS

[Curtailment Tool](#)

[Filter Excess Tool](#)

[Inspector Deployment Tool](#)

[Routing & Inspector Deployment Report](#)

[Complaints By County Report](#)

[Complaints By City Report](#)

[Stats With chart Report](#)

## PUBLIC TOOLS

[Public Complaint Form](#)

# Complaint Search

 <b>BAY AREA AIR QUALITY MANAGEMENT DISTRICT</b>	
<b>SEARCH TOOLS</b> <a href="#">Complaint Search</a> <a href="#">Complaints in the last 24 hours</a> <a href="#">Complaints in the last 74 hours (Heavy)</a> <a href="#">Complaints in the last 48 hours</a> <a href="#">Complaints in the last 48 hours (Heavy)</a> <a href="#">Complaints in the last week</a> <a href="#">Multiple Complaint Tool</a> <a href="#">Create New Route</a> <a href="#">Look Up/Save Routine Tool</a> <a href="#">Routing Tool History</a>	<b>ADMINISTRATIVE TOOLS AND REPORTS</b> <a href="#">Curtailment Tool</a> <a href="#">Filter Excess Tool</a> <a href="#">Inspector Deployment Tool</a> <a href="#">Routing &amp; Inspector Deployment Report</a> <a href="#">Complaints By County Report</a> <a href="#">Complaints By City Report</a> <a href="#">Stats With chart Report</a>
<b>ADMINISTRATOR TOOLS</b> <a href="#">Manage Users</a> <a href="#">Change Administrator Password</a> <a href="#">Complaint Holding Area</a> <a href="#">Move Complaints into Holding Area</a> <a href="#">Manage Exempt Address List</a> <a href="#">Manage Contact Supervisor Address List</a> <a href="#">Upload Enforcements</a> <a href="#">Upload Exempt Addresses</a> <a href="#">Export Addresses (in previous 7 days, 30 days and 180 days)</a>	<b>PUBLIC TOOLS</b> <a href="#">Public Complaint Form</a>

MAP ALL COMPLAINTS

## COMPLAINTS

In the last 24 hours

In the last 24 hours

In the last 48 hours

In the last week

In the last month

In the last 180 days

7 RECORDS FOUND

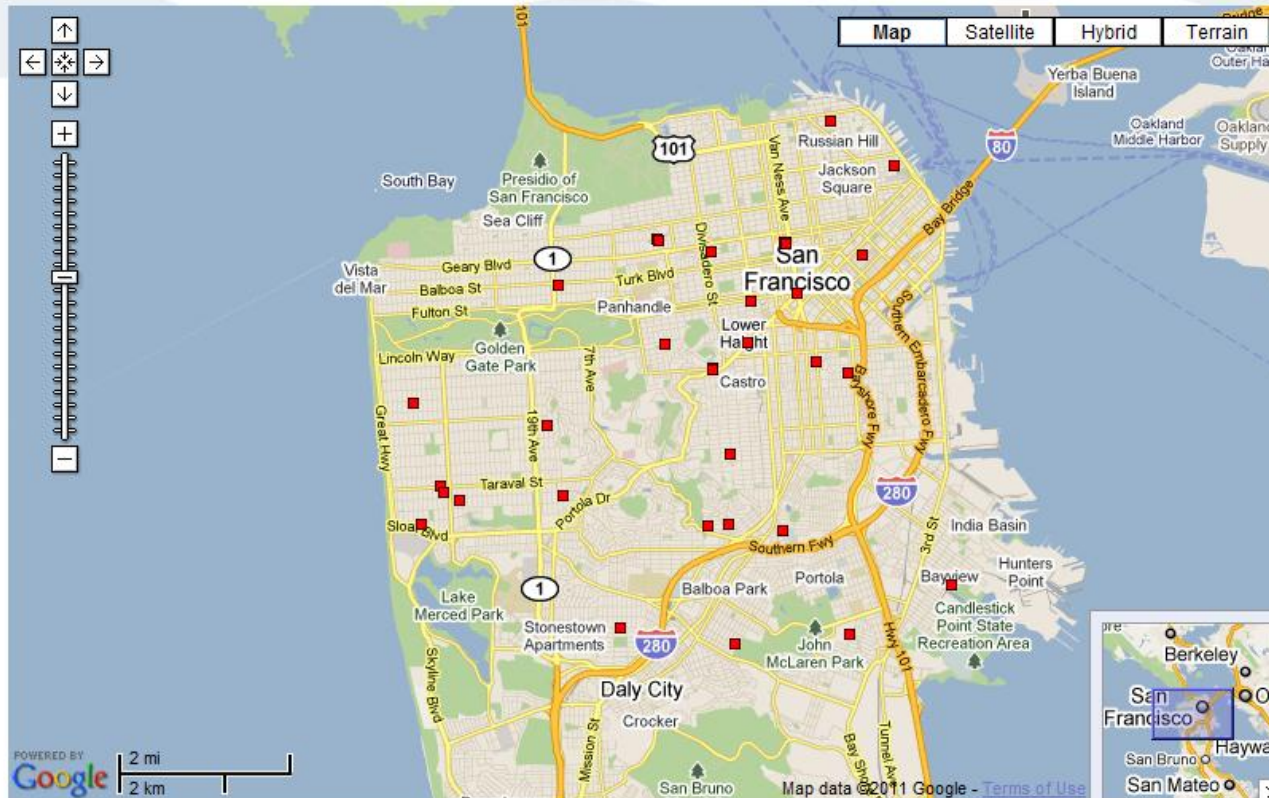
[EXPORT TO EXCEL](#)

<u>COMPLAINT ID</u>	<u>COMPLAINT</u>	<u>DATE REPORTED</u>	<u>TIME REPORTED</u>	<u>COMPLAINANT NAME</u>	<u>SITE CITY</u>	<u>SITE ADDRESS</u>	<u>SITE COUNTY</u>	<u>WARNING LETTER</u>	<u>NOV DATE</u>	<u>MAP LINK</u>
<a href="#">1030466</a>		2/3/2011	7:59 AM		richmond	36 canal dr	CONTRA COSTA			<a href="#">[MAP]</a>
<a href="#">1030465</a>	in the wintertime. They are contributing to an unhealthy level of wood smoke pollution in the neighborhood.	2/3/2011	7:26 AM		Novato	45 Eames Court	MARIN			<a href="#">[MAP]</a>
<a href="#">1030464</a>	Extremely toxic smell - like burning garbage or wood with paint	2/2/2011	7:51 PM	Martha Allen	Forest Knolls		MARIN			<a href="#">[MAP]</a>
<a href="#">1030463</a>	stinky stinky dark smoke for over an hour	2/2/2011	5:57 PM		forest knolls	12 Morelos Ave.	MARIN			<a href="#">[MAP]</a>
<a href="#">1030462</a>	thick dark smoke way beyond 20% opacity for way longer than 20 minutes.	2/2/2011	5:56 PM		forest knolls	80 Resaca	MARIN			<a href="#">[MAP]</a>
<a href="#">1030461</a>	thick dark smoke way beyond 20% opacity for way longer than 20 minutes.	2/2/2011	5:55 PM		forest knolls	bensch	MARIN			<a href="#">[MAP]</a>
<a href="#">1030441</a>	Telephone complaint.	2/2/2011	6:14 AM		SUNNYVALE CT	1090 ROCHESTER CT	SANTA CLARA			<a href="#">[MAP]</a>

# Complaint Mapping

 BAY AREA AIR QUALITY  
MANAGEMENT DISTRICT

BAY AREA AIR QUALITY MANAGEMENT DISTRICT	
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# Complaint Routing

## BAY AREA AIR QUALITY MANAGEMENT DISTRICT

### Calculated Route

Starting address: 245 elm ave mill valley, CA

Routing ID: 1781

Routing to complaints: [1027181](#) [1027182](#) [1027543](#) [1027544](#) [1027561](#) [1027654](#) [1027666](#) [1027766](#) [1027813](#) [1027915](#) [1027917](#) [1027991](#) [1028109](#) [1028701](#) [1028931](#) [1029727](#) [1029728](#) [1029729](#) [1029823](#)

Routing to addresses in this order (drag to reorder):

☒ [B] 245 Elm Ave, Mill Valley, CA 94941, USA

☒ [H] Mill Valley, CA, USA

☒ [I] 55 Lovell Ave, Mill Valley, CA 94941, USA

☒ [K] Lovell Ave, Mill Valley, CA 94941, USA

☒ [M] 418 Maple St, Mill Valley, CA 94941, USA

☒ [N] 343 Robin Rd, Mill Valley, CA 94941, USA

☒ [P] 315 Ricardo Rd, Mill Valley, CA 94941, USA

Calculate Reordered Route

Copy Route

Copy Route & Directions

ADD ADDRESS:

Street address:

City:

State: CA

Add Address

Directions



Elm Ave

### MAP ALL COMPLAINTS

CREATE NEW  
ROUTE

In the last 180 days MILL VALLEY

Heavy - cannot see through it

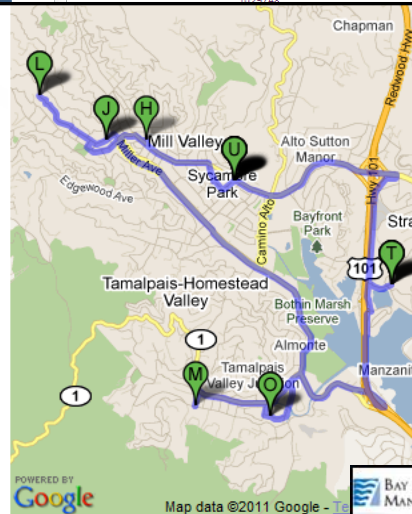
ADD ROUTING ID

20 RECORDS  
FOUND

CREATE ROUTE  
FROM SELECTED

START: Street address: 245 elm ave City: mill valley State: CA Return to starting address at end of route? ☒

IN ROUTE	VISITED?	DATE VISITED	WHO VISITED	COMPLAINT ID	COMPLAINT DESCRIPTION	DATE REPORTED	TIME REPORTED	COMPLAINANT'S NAME	SITE CITY	SITE ADDRESS	SITE COUNTY	WARNING LETTER	NOV DATE	MAP LINK
<input checked="" type="checkbox"/>				1029823	Thick smoke that went on for over an hour. Happens every day at around this time.	1/18/2011	8:34 PM		Mill Valley	245 Elm Ave	MARIN	1/14/2010		[MAP]
<input type="checkbox"/>				1028748	they have had a fire burning	1/17/2011	5:05 PM		mill valley		MARIN			[MAP]



## BAY AREA AIR QUALITY MANAGEMENT DISTRICT

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Filter Excess Tool  
Inspector Deployment Tool  
Routing & Inspector Deployment Report  
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Stats With chart Report

### PUBLIC TOOLS

Public Complaint Form

## Winter Spare the Air Advertising Approach

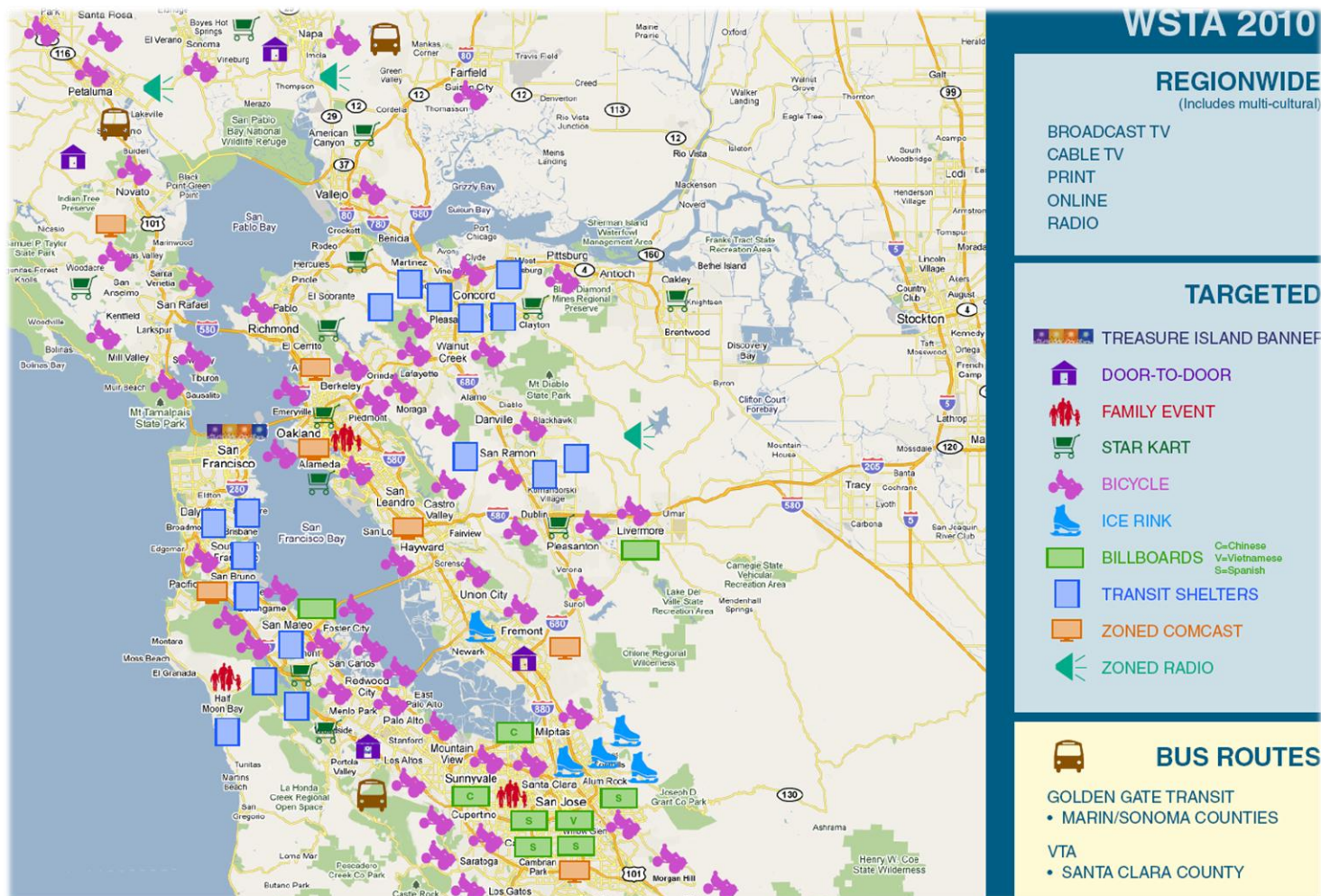
- Message to areas more likely to exceed the 24-hour standard
- Stress health effects of wood burning
- Target messages to non-English speaking communities
- Multicultural outreach





# Outreach

*“Wood smoke reduction is as much public outreach as regulation.”*





- **Check Before You Burn:**

- ✓ **Call** 1-877-4NO-BURN
- ✓ **Check** the *Winter Spare the Air* Alert status at [www.sparetheair.org](http://www.sparetheair.org) or, [www.baaqmd.gov](http://www.baaqmd.gov)
- ✓ **Listen** for *Alerts* on local news and TV

- **Or, sign-up for:**

- ✓ Email *AirAlerts* notifications at [www.sparetheair.org](http://www.sparetheair.org)
- ✓ Automatic phone alerts at [www.sparetheair.org](http://www.sparetheair.org) or by calling 1-800 430-1515

- ***Always Burn Cleanly (No Excessive Smoke)***





# Labeling Requirement

- **Solid-fuel Labeling Requirement**
  - ✓ Wood, pellets, firewood, fire-starters, manufactured, pressed or other fire logs
  - ✓ “Use of this and other solid fuels may be restricted at times by law. Please check 1-877-4NO-BURN or <http://www.8774NOBURN.ORG> before burning.”
- **Duraflame vs. BAAQMD Litigation: Jan 2009 – Dec 2010**
  - ✓ Delayed implementation – BAAQMD prevailed
- **Interim Alternative Compliance Option (IACO)**
  - ✓ **Option for Retailers:**
    - ❖ Post label signs every 2 feet of product, and
    - ❖ Provide leaflets, coupons or labels near products
    - ❖ IACO expires April 10, 2011

A background image of a city skyline at dusk or dawn, with buildings illuminated and reflected in water.

# Survey Results

## **Increased Awareness/Reduced Wood Burning**

- 71% support the no-burn policy/regulation
- 74% aware of “check before you burn”
- 26% of Bay Area households reduced their wood burning
- 69% of Bay Area adults understand that there are negative health effects of wood smoke
- 50% reduction in number of people burning on previous night from the first season



# Summary

- Wood smoke program is successful
  - ✓ Survey data, field observations, monitoring data
- Program is critical to attain PM<sub>2.5</sub> AQ standards
  - ✓ Wood smoke is the primary component of winter PM<sub>2.5</sub>
- Program is protecting public health of Bay Area residents
- Essential program components:
  - ✓ Education & Outreach
  - ✓ Compliance assistance
  - ✓ Robust enforcement program